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The survey findings are in favor of maintaining the Butler Bay Recreation area as a passive (environmental) park with amenities like a gazebo, picnic tables, boardwalk, and kayak launch included in the final plan.

The Fall Forum and Butler Bay (Online) Survey ensured that all citizens were given the chance to be actively engaged in the initial planning process. These findings will be utilized in the design phase of the planning process to determine which features would most likely be utilized.



# CONSTRAINTS ANALYSIS



Introduction

Data Collection & Methodology

Base Mapping

Exhibits

# 3

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## PART THREE: SITE CONSTRAINTS ANALYSIS

### Introduction

The scope of GIS Services, tasks completed, and the proposed methodology provided to the Town of Windermere for the improvement of civic land use are included in this section of the Report.

The Team engaged Town of Windermere staff, elected officials, stakeholders, and residents in creating a comprehensive approach to the redevelopment of Butler Bay Recreation Center and supporting green infrastructure, and in doing so, the Butler Bay Recreation Center's existing conditions have been analyzed as well as community needs identified. The results of the GIS analysis will be used as guidelines for design scenarios on the site.

### Data Collection & Methodology

Data was collected using ArcGIS 10, and the Team retrieved and analyzed the spatial data to document the existing conditions of the project site. The Team has assembled a comprehensive database of the GIS data for all manipulation and analysis in subsequent steps. The data collected has been organized and utilized in the creation of supporting maps and data tables (See **Table** ).

**Table 3.1**  
**GIS Resource Data and Sources**

Source	Website	Data Retrieved
Orange County	<a href="ftp://ftp.ocfl.net/divisions/Infomap/pub/GIS_Downloads/">ftp://ftp.ocfl.net/divisions/Infomap/pub/GIS_Downloads/</a>	Streets 2012 Parcels
FDEP	<a href="http://www.dep.state.fl.us/gis/">http://www.dep.state.fl.us/gis/</a>	Hydrology
FDOH	<a href="http://www.doh.state.fl.us">http://www.doh.state.fl.us</a>	Streets Roads
US Fish & Wildlife Service: NWI	<a href="http://www.fws.gov/wetlands/Wetlands-Mapper.html">http://www.fws.gov/wetlands/Wetlands-Mapper.html</a>	2012 NWI
FEMA	<a href="http://www.fema.gov/">http://www.fema.gov/</a>	Flood Plain Zones
Natural Resource Conservation Service (NRCS):	<a href="http://soils.usda.gov/">http://soils.usda.gov/</a>	Soil Inventory

### Base Mapping

The Team has assembled a series of base maps that depicts existing conditions in the Town of Windermere as they pertain to the Butler Bay recreational facility. **Table 3.2** lists the documented data for the site.



**Table 3.2**  
**List of Documented Features as Resources for Design Phase of Project**

Subject Topic	Included Elements
Political Boundaries	<ul style="list-style-type: none"> <li>• Parcels (2012)</li> <li>• Municipal Boundaries</li> </ul>
Transportation Network	<ul style="list-style-type: none"> <li>• Arterial and Collector Roads</li> <li>• Bike Routes and Roads with Bike Lanes</li> <li>• Railways</li> <li>• Public Parking Space</li> </ul>
Public Safety	<ul style="list-style-type: none"> <li>• Fire Stations</li> <li>• Police Stations</li> </ul>
Infrastructure	<ul style="list-style-type: none"> <li>• Town Parks</li> <li>• Boat Ramps</li> </ul>
Planning/Land Use	<ul style="list-style-type: none"> <li>• Zoning/Existing Land Use</li> <li>• Future Land Use</li> </ul>
Environmental	<ul style="list-style-type: none"> <li>• Soils</li> <li>• Wetlands</li> <li>• Floodplains</li> <li>• Topography</li> </ul>
Hydrology	<ul style="list-style-type: none"> <li>• Lakes, Local Water Bodies</li> </ul>

The base maps have characterized the site of interest and will be useful in determining bounding constraints and areas of opportunity in subsequent project steps, including the design scenarios which have yet to commence. For example, a map that depicts wetlands aids in determining whether there are development constraints associated with the Butler Bay recreational facility. The base maps and supplemental data will be utilized as backdrops for displaying development proposals or scenarios, exhibiting the level of feasibility for future design scenarios within the site.

In addition, the base maps have been utilized during the public participation community meeting and served as a focal point of information for the public participation process, thereby helping the residents better understand the existing conditions. The produced base maps aided in visualization as the practicality of each suggestion was put forward by the participants, and in doing so, played a significant role in the decision-making process.

## **Exhibits**

### **Town of Windermere - Existing Conditions**

The existing conditions exhibit is critical to effective and comprehensive planning as it defines the needs and requirements of the community. This map includes the individual parcel boundaries as well as the administrative boundaries of the Town, basic transportation network including roads with multi-use trails, and existing public infrastructure (Schools, police department, Town hall, and public library). The map also includes existing parks within the Town, respective descriptions, and those that contain



boat ramp access for residents (See **Exhibit 11** in **Appendix C**). Existing parks and amenities available at each are available in **Table 3.3**.

Butler Bay Recreation Center is one of the largest parks in the area, exceeding ten acres, yet it remains one of the most underutilized. The park is located on the north side of Park Avenue Road. The park lies adjacent to residential neighborhoods and has access to Crescent Lake, increasing its intrinsic value as an underutilized resource for residents and visitors. Moreover, Windermere Elementary School, located a few blocks from the park, may have the advantage of utilizing Butler Bay Recreation Center as an open space area for the student activities and events in the future. Within the site, two tennis courts are situated in the eastern section of the park, which are heavily used by residents of the Town.

**Table 3.3**  
**Park Inventory**

<b>Park Name</b>	<b>Location</b>	<b>Amenities</b>	<b>Park Area</b>
<b>Lake Down Park</b>	Lake Down Lakefront from Lake Street & Fifth Avenue	<ul style="list-style-type: none"> <li>• Swim Area</li> <li>• Boat Dock</li> <li>• Benches/Picnic Tables &amp; Swing</li> <li>• Walking Path</li> <li>• No Parking</li> </ul>	0.20 acres
<b>Palmer Park</b>	Pine Street between Second & Third Avenues	<ul style="list-style-type: none"> <li>• Playground</li> <li>• Picnic Tables &amp; Benches</li> <li>• Parking</li> </ul>	2.03 acres
<b>Central Park</b>	Oakdale Street, between Fourth & Fifth Avenues	<ul style="list-style-type: none"> <li>• Playground</li> <li>• Picnic Tables; Pavilion</li> <li>• Jogging Path</li> <li>• Frisbee</li> <li>• Parking</li> </ul>	1.54 acres
<b>Fernwood Park</b>	Lake Butler at Butler Street & Seventh Avenue	<ul style="list-style-type: none"> <li>• Town Boat Ramp<sup>1</sup></li> <li>• Boat Dock</li> <li>• Parking (No boat trailer parking)</li> </ul>	1.70 acres
<b>Park Among the Lakes</b>	Lake Butler at Main Street, between Second & Third Avenues	<ul style="list-style-type: none"> <li>• 3 Tennis Courts<sup>2</sup></li> <li>• Sand Volleyball Court</li> <li>• Bike Rack</li> <li>• Parking</li> </ul>	1.54 acres
<b>Lake Bessie Lakefront</b>	From Eighth to Eleventh Avenue along Magnolia Street	<ul style="list-style-type: none"> <li>• Town Boat Ramp<sup>1</sup></li> <li>• Walking Path</li> <li>• No Parking</li> </ul>	0.12 acres
<b>Johnson Park</b>	Lake Bessie Lakefront along Sixth Avenue, between Lee & Lake Streets	<ul style="list-style-type: none"> <li>• Bench</li> <li>• No Parking</li> </ul>	.5 acres
<b>Town Square</b>	Main Street to Forest Street between Fifth & Seventh Avenues	<ul style="list-style-type: none"> <li>• Basketball Courts</li> <li>• Benches &amp; Picnic Tables</li> <li>• 9/11 Memorial Site</li> <li>• Chase Memorial Library</li> </ul>	3.06 acres



		<ul style="list-style-type: none"> <li>• Parking</li> </ul>	
<b>Parramore Park</b>	Main Street to Forest Street at Seventh Avenue	<ul style="list-style-type: none"> <li>• 1890's Schoolhouse (Historic Site)</li> <li>• Parking</li> </ul>	0.83 acres
<b>Lake Street Park</b>	Lake Down Lakefront at Magnolia Street, between Third & Fifth Avenues	<ul style="list-style-type: none"> <li>• Fishing Pier</li> <li>• Walking Path</li> <li>• Parking</li> </ul>	1.03 acres
<b>5<sup>th</sup> Ave Pocket Park</b>	5 <sup>th</sup> Avenue/Oakdale	<ul style="list-style-type: none"> <li>• Discussion of future uses on-going</li> </ul>	0.22 acres
<b>Butler Bay Recreation Center</b>	11465 Park Avenue	<ul style="list-style-type: none"> <li>• Transferred to Town in 2011</li> <li>• Tennis Courts<sup>2</sup></li> <li>• Dock (Closed/Unsafe condition)</li> <li>• Island (well groomed)</li> <li>• Wetlands area</li> </ul>	9.52 acres

Source: Town of Windermere, FL

Boat Ramp – Town Residents pay \$35.00/year for key to boat ramp.

<sup>2</sup> Tennis Court – Town Residents pay \$25.00/year for key to tennis courts.

### Transportation Network Map

Included in **Exhibit 12** map located in **Appendix C**.

### Zoning/Existing Land Use Map

Understanding the characteristics of the land use designations of the site and the dynamics with the surrounding uses is essential for the development of integrative green infrastructure strategies in future phases of the project. The current land use designations for the Town of Windermere include the following:

- Agricultural
- Commercial
- Conservation
- Public Use
- Recreation
- Single Family Residential
- Vacant Agricultural
- Vacant Industrial
- Vacant Residential

The Zoning map indicates that the Town as well as the area of interest is predominantly a single-family residential community. In the case of predominant residential communities it may be of interest to provide breadth and depth of recreational assets in the form of open space to support the neighborhoods of the Town. Proximity to parks may be beneficial to neighboring properties in terms of tangible monetary values and ecological benefits. Proximity to parks can also produce health benefits. The study area is currently zoned recreational (See **Exhibit 13** in **Appendix C**).



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## Future Land Use Map

The Future Land Use Map shows the land use types as deemed most appropriate by the Town and which are intended to guide future development (See **Exhibit 14** in **Appendix C**). The Land use classes for Town of Windermere are as follows:

- Agricultural
- Commercial
- Conservation
- Public Use
- Recreation
- Single Family Residential

## Federal Emergency Management Agency (FEMA) Flood Hazard Map

The extension of Lake Crescent that creates the floodplain area extending into the park study area encompasses about 5.33 acres and covers all of the island area in the north end of the site and a small strip of the northern adjacent land abutting the island (Refer to Exhibit 15 in Appendix C). In this Special Flood Hazard Area (SFHA), the National Flood Insurance Program's (NFIP's) floodplain management regulations must be adhered to and a mandatory purchase of flood insurance applies in the case that any buildings exist (Federal Emergency Management Agency, 2012). The code of regulation requires specific building code requirements to minimize the risks associated with such a classified area, although the floodplain area intersects most of the same area as an identified wetland, rendering a level of constraint on any future construction on the site in this designated area (See **Exhibit 15** in **Appendix C**).

## Natural Resources Conservation Service (NRCS) Soils Map

MUSYM is the abbreviation for map unit symbol field, which distinguishes the different soil types in an area. Three general types of soils exist in the park area boundary including MUSYM: 42, 44, and 47 (See **Exhibit 16** in **Appendix C**).

### ***MUSYM 42: Sanibel Muck***

There is about 2.80 acres in the northwest corner of the study area. This soil is nearly level and poorly drained. The soil is located within depressions, freshwater swamps and marshes, and in poorly defined drainage paths. Areas with poor drainage may be ponded for 6 to 9 months or more each year. Typically, this soil has an organic surface layer of black muck about 11 inches thick. Below that layer, to a depth of about 15 inches, is black fine sand. The permeability is rapid throughout the year and internal drainage is low and is inhibited by the shallow water table. The available water capacity is very high in the organic material and is medium to low in the underlying sandy material. Natural fertility is moderate and the organic matter content is high.

In most areas, this Sanibel soil has been left in natural vegetation. In a few areas where fill material has been applied, the soil is used for homesite and urban development. The



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natural vegetation may include mixed stands of bald cypress, red maple, sweetgum and black tupelo. The understory includes cattail, St. Johnsworth, pickerelweed, sawgrass, maidencane, ferns, sedges and other water tolerant grasses. The natural areas provide cover for deer and excellent habitat for wading birds and other wetland wildlife. Under natural conditions, the soil is poorly suited to improved pasture grasses; however if a water control system is installed to remove excess water after heavy rains, suitability is fair. Pangola grass, improved bahia grass, and white clover grow well if properly managed.

*This soil has also severe limitations for building site development, sanitary facilities and recreational uses because of ponding and excess humus. Water control measures should be used to minimize the excessive wetness limitation.* Organic material should be removed and backfilled with a soil material suitable for urban use. According to the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), dwellings with and without basements, small commercial buildings, Camp areas, picnic tables, playgrounds, paths, trails, and golf fairways all have very limited potential in this identified soil area. Although no commercial structures or residential dwellings are most likely going to be proposed on this area, consideration of these limitations should be evaluated during site design.

#### **MUSYM 44: Smyrna Fine Sand**

There is approximately 2.75 acres of Smyrna Fine Sand stretching east to west through the mid-section of the study area. This soil is nearly level and poorly drained. It is on broad flatwoods. The slopes are smooth and range from 0 to 2 percent. Typically, this soil has a layer of black fine sand about 4 inches thick. The subsurface layer, to a depth of about 17 inches thick, is gray fine sand. In most years, a seasonal high water table is within 10 inches of the surface for one month to 4 months. It recedes to a depth of 10 to 40 inches for more than 6 months. The permeability is rapid in the surface and the subsurface layers and in the substratum, and it is moderate to moderately rapid in the subsoil. Natural fertility is low.

In most areas, the Smyrna soil has been left in natural vegetation. In a few areas it has been used for cultivated crops, improved pasture or citrus crops or for homesite and urban development. The natural vegetation is longleaf pine and slash pine. The understory includes lopsided indiagrass, inkberry, saw palmetto, pineland threeawn, waxmyrtle, bluestem, panicum and other grasses.

*The soil has severe limitations for sanitary facilities, building site development and recreational uses. Water control measures should be used to minimize the excessive wetness limitation. The proximity to a stream or aquifer recharge area should be considered in the placement of sanitary facilities to prevent contamination of the water supplies. Septic tank absorption fields may need to be enlarged because of wetness. Fill material is needed for local roads and streets, small commercial buildings and playgrounds.* The sealing or lining of a sewage lagoon or trench sanitary landfill with impervious soil material can reduce excessive see page. The USDA NRCS has identified that dwellings with and without basements, small commercial buildings, Camp areas, picnic tables, playgrounds, paths, trails, and golf fairways all have very limited potential



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in this identified soil area. Consideration of these limitations should be evaluated during site design.

#### **MUSYM 47: Tavares-Millhopper Fine Sand**

There is approximately 1.60 acres of Tavares-Millhopper fine sands that span the southern east-west section of the study area bordering Park Avenue. Tavares and Millhopper soils are nearly level to gently sloping and are moderately well drained. The soils are usually on low ridges and knolls in the upland areas and on flatwoods, and they are in higher areas adjacent to flatwoods. A seasonal high water table in Tavares soil is at a depth of 40 to 72 inches for more than 6 months, and it recedes to a depth of more than 80 inches during extended dry periods. A seasonal high water table in the Millhopper soil is at a depth of 40 to 60 inches for 1 month to 4 months, and it recedes to a depth of 60 to 72 inches for 2 to 4 months. During periods of high rainfall, the water table is at a depth of 30 to 40 inches for cumulative periods of 1 week to 3 weeks. The permeability of Tavares soil is very rapid and that of Millhopper soil is rapid in the surface and subsurface layers and moderately rapid or moderate in the subsoil. The natural vegetation is bluejack oak, turkey oak, live oak, water oak, laurel oak, slash pine and longleaf pine. The understory includes creeping bluestem, lopsided indiagrass, grassleaf golaster and pineland threeawn.

*These soils have slight limitations for dwellings without basements, small commercial buildings, and local roads and streets. Land shaping may be needed in the more sloping areas. These soils have moderate limitations for septic tank absorption fields. Water control measures should be used for septic tank absorption fields. When installing a septic tank absorption field on these soils, the proximity to a stream or canal should be considered to prevent lateral seepage and ground water pollution. The sidewalls of shallow excavations should be shored. The sandy surface layer should be stabilized for recreational uses.*

Usually, such soils are used for citrus crops or pasture or for homesite and urban development. If the density of the housing is moderate to high, a community sewage system can help prevent contamination of the water supplies. These soils have severe *limitations* for sewage lagoons, trench sanitary landfills, shallow excavations and *recreational uses*. The sealing or lining of a sewage lagoon or trench sanitary landfill with impervious soil material can reduce excessive seepage. Water control measures should be used for trench sanitary landfills. According to USDA NRCS recommendations, dwellings and commercial buildings have little limitation in this soil area, camp areas, picnic tables, and playgrounds are very limited, and paths and trails are also very limited. This should be considered during site design and mitigation techniques employed to minimize limitations.

#### **National Wetland Inventory (NWI) Wetlands Map**

The wetland map utilizes the NWI classification system to identify a freshwater forested/shrub wetland located on the site, particularly on the majority of the northern island portion of land area of the site. The portion of this wetland that exists within the park boundary encompasses approximately 3.14 acres (See **Exhibit 17** in **Appendix C**).



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In total, the wetland covers approximately 8.87 gross acres and extends northeast out of the park boundary into the backyards of nine homes. Important to note is that six of these nine homes have boathouses on Lake Crescent which also include dedicated pathways or clearings that run through the wetland area to access these boathouses which may weigh into future decisions in the wetland area in the adjacent park area under examination.

Orange County regulations require a Conservation Area Impact (CAI) permit to construct anything on class 1 wetland as the site contains. In addition, since the wetland is class 1, the CAI permit requires approval by the Orange County Board of county Commissioners and if approved, the CAI is valid for five years. The fees associated with this permit total \$1,236.00 for a non-single family impact less than ten acres.

The classification code for freshwater forested/shrub wetlands is PSS1F, indicating that the system is Palustrine, therefore being non-tidal and including broad-leaved deciduous woody scrubs/shrubs less than 20 feet tall (U.S. Fish and Wildlife Service: National Wetlands Inventory, 2012). The F at the end of this classification code indicates that the wetland area on the island is semi-permanently flooded which means that surface water may persist throughout the growing season in most years (U.S. Fish and Wildlife Service: National Wetlands Inventory, 2012). Further, when surface water is absent on this wetland area, this is an indication that the water table is typically nearing the land's surface (U.S. Fish and Wildlife Service: National Wetlands Inventory, 2012). Off of the northwestern tip of the island on the site is a clustering of native cattails.

### **USGS Topography Map**

USGS topography is included in this report for supporting site documentation in the next design phase of the project. Topographical elements may assist in determining what and where certain features can be placed, avoided, manipulated, or preserved as they relate to the overall design of the park site. About half of the park site adjacent to Park Avenue remains more elevated as the grade slightly depresses towards the island portion of the parcel (See **Exhibit 18** in **Appendix C**).

